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(54) Title of the Invention: Image device with character display function

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SPECIFICATION

1. Title of the Invention

Image device with character display function

2. Scope of Claim

An image device with character display function for superposingly displaying time or a receiving channel on an image configured from a video signal which comprises a first processing circuit for forming a character signal expressing a receiving channel and a character signal expressing time respectively correspondent to a channel code signal expressing a receiving channel and a time code signal expressing time supplied thereto, and a second processing circuit for superposing said character signals on a video signal, characterized in that it comprises: first means for selectively indicating the receiving channel and time display; second means for supplying the above channel code signal or the above time code signal to the above first processing circuit in accordance with the indication from said first means; and third means for stopping the supply from the above first processing circuit to the above second processing circuit of the character signal expressing the receiving channel after a prescribed time from the indicated time for receiving channel display by above first means has elapsed, wherein the time display is continuous and the receiving channel display is restricted to the above prescribed time.

### 3 Detailed Description of the Invention

#### (Field of Industrial Utilization)

The present invention relates to an image device with character display function for displaying the time and a receiving channel on a screen together with an image.

#### (Prior Art)

In conventional image devices with character display function, time and receiving channel display can be selectively or simultaneously displayed on a screen by the operation of an operating switch or the like provided in either said image device or a remote operating device.

When display is indicated by means of the above operating switch or the like, a display method for automatically deleting the display following display for a prescribed time only (for example, several seconds), or a display method for continuing the display until the stopping of the display has been indicated is adopted.

However, while on the one hand continuous display of the receiving channel display constitutes an aesthetic blemish, the automatic deleting of a display when a prescribed time has elapsed is inconvenient in that, to the extent that one wishes to ascertain the time, operating switches and so on need to be operated.

#### (Object of the Invention)

An object of the present invention is to provide an image device with character display function that obviates

the drawbacks of the prior art described above, facilitates the optimum display of the time and receiving channel and, moreover, that has good operability.

(Outline of the Invention)

The present invention for achieving this object is characterized by, when a receiving channel display command is indicated, said display is automatically deleted after the receiving channel display has been displayed for a prescribed time and, when a time display command is indicated, the time display is continued until an operation for the stopping of the display is performed.

(Embodiment of the Invention)

An embodiment of the present invention will be hereinafter described with reference to the drawing.

In the drawing, which is a block diagram that shows one embodiment of the image device with character display function based on the present invention, the symbol 1 denotes a tuning circuit, 2 denotes a tuner, 3 denotes a video detection circuit, 4 denotes an adder circuit, 5 denotes a display device, 6 denotes a switch circuit, 7 and 8 denote counters, 9 denotes a character control circuit, 10 denotes a character generation circuit, 11 denotes a synchronization signal separation circuit, 12 denotes a switch circuit, 13 denotes a selector switch, and 14 denotes a control signal generation circuit.

When the desired channel is set, a control signal

indicating the channel is supplied to the tuner 2 from the tuning circuit 1, and the receiving signal of the designated channel is selected by the tuner 2. The receiving signal is detected by the video detection circuit 3 which produces a video signal, and this video signal is supplied to the display device 5 following the addition by the adder circuit 4 of a later-described character signal expressing the time or receiving channel. By virtue of this, an image on which a time display or receiving channel display has been superposed can be produced in the display device 5.

In addition, the tuning circuit 1 "encodes" the designated receiving channel as a channel code signal and supplies it to the switch circuit 6. Furthermore, a counter 7 for setting time in accordance with a commercial power source frequency supplies a time code signal expressing time to the switch circuit 6, and the channel code signal and time code signal are selectively supplied to the character control circuit 9 in accordance with a control signal from the later-described control signal generation circuit 14.

The character control circuit 9 indicates to the character generation circuit 10 the type and size and so on of the character for display in accordance with the supplied code signal as described above which selects the character signal correspondent to the code signal.

The character generation circuit 10 supplies the above character signal to the switch circuit 12 after it has been

has been synchronized using a synchronization signal separated from the video signal by the synchronization signal separation circuit 11 and synchronized for display in a prescribed position of the screen. When the switch circuit 12 is in the ON state the character signal is supplied to the adder circuit 4 where a video signal from the video detection circuit 3 is added before being supplied to the display device 5 and superpositively displayed on the image.

The selector switch 13 constitutes a switch for the selecting of time display and receiving channel display.

Here, the control signal generation circuit 14 detects when the selector switch 13 has been switched to the time display side a and supplies a control signal for indicating time display to the switch circuit 6 and, in addition, supplies a control signal to the switch circuit 12 for switching it ON.

In this case, the time code signal from the counter 7 is supplied to the character control circuit 9 by way of the switch circuit 6, and the character signal expressing the time generated by the character generation circuit 10 passes through the switch circuit 12 in the ON state due to the above control signal to be supplied to the adder circuit 4. Accordingly, time is displayed in the display device 5.

Next, the control signal generation circuit 14 detects when the selector switch 13 has been switched to the receiving channel display side b and supplies a control

signal for indicating receiving channel display to the switch circuit 6 and, in addition, supplies a control signal to the switch circuit 12 for switching it ON. Accordingly, the channel code signal is supplied from the tuning circuit 1 to the character control circuit 9 side by way of the switch circuit 6, and the character signal expressing the receiving channel which is generated by the character generation circuit 10 is passed through the switch circuit 12 in the ON state to be supplied to the adder circuit 4. Thereupon, the receiving channel is displayed in the display device 5.

On the other hand, when the receiving channel display has been designated, simultaneous with the switchover of the selector switch 13 to the receiving display side b, a counter 8 for counting the time in accordance with a commercial power source frequency initiates a count operation and, when a prescribed time (for example, several seconds) has elapsed, generates a control signal for switching the switch circuit 12 OFF. The switch circuit 12, which having received this control signal is in the OFF state, stops the supply of the character signal expressing the receiving channel to the adder circuit 4. Accordingly, the receiving channel is displayed only for the period of the above prescribed time set by the counter 13.

As is described above, because the receiving channel display is displayed only for a prescribed time before being deleted it does not constitute an aesthetic blemish, while on

the other hand, because the time display is continuous until the selector switch 13 is switched over to the receiving channel display side b or until the appropriate means for stopping the display has been operated, the inconvenience of having to perform operations to the extent that one wishes to ascertain the time is eliminated.

(Effect of the Invention)

According to the present invention as described above, an image device with character display function having improved functions for obviating the drawbacks of the prior art described above in which the inconvenience of having to perform an operation for time display is eliminated because the time display is continuous, in which the receiving channel does not constitute an aesthetic blemish because it is displayed only as required for a prescribed time before being automatically deleted, and in which the time and receiving channel can be optimally displayed and the operability is improved can be provided.

4 Brief Description of the Drawings

The drawing constitutes a block diagram showing one embodiment of an image device with character display function based on the present invention.

- 1    Tuning circuit
- 4    Adding circuit
- 5    Display device
- 6    Switch circuit



